

CLAIMS:

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comprising,

1. A method of resisting corrosion of metals in concrete comprising,
introducing into concrete-making materials components of a compound capable of sequestering chloride ions,
establishing said concrete having metal elements embedded therein.
allowing said concrete to set.
2. The method of claim 1 including
employing as said compound a compound capable of establishing a corrosion resistant oxide layer on said embedded metal elements.
3. The method of claim 1 including
effecting said chloride sequestration in a low-solubility compound.
4. The method of claim 3 including
employing a nitrite-containing compound as said compound.
5. The method of claim 1 including
introducing said components of solid compound into mixing water for making said concrete.
6. The method of claim 5 including
introducing said components into said mixing water in a solution.
7. The method of claim 1 including
employing in said components at least one material selected from the group consisting of NaAlO_4 , $\text{Ca}(\text{NO}_2)_2$ and NaNO_2 .
8. The method of claim 7 including
reacting $\text{Ca}(\text{OH})_2$ with said components.
9. The method of claim 8 including
introducing said $\text{Ca}(\text{OH})_2$ as a said component.
10. The method of claim 8 including
producing said $\text{Ca}(\text{OH})_2$ by hydration of said concrete.

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11. The method of claim 1 including
employing as said components a source of aluminum other than
 $\text{CaO} \cdot \text{Al}_2\text{O}_3$ and $3\text{CaO} \cdot \text{Al}_2\text{O}_3$.
12. The method of claim 11 including
employing as said source of aluminum a material selected from
the group consisting of alumina, aluminates and alumina hydroxides.
13. The method of claim 1 including
employing in said components a material selected from the group
consisting of nitrite salts and nitrate salts.
14. The method of Claim 1 including
employing as said compound a compound selected from the
group consisting of
 $3\text{CaO} \cdot \text{Al}_2\text{O}_3 \cdot \text{Ca}(\text{NO}_2)_2 \cdot n\text{H}_2\text{O}$; $3\text{CaO} \cdot \text{Al}_2\text{O}_3 \cdot \text{Ca}(\text{NO}_3)_2 \cdot n\text{H}_2\text{O}$;
 $3\text{CaO} \cdot \text{Fe}_2\text{O}_3 \cdot \text{Ca}(\text{NO}_2)_2 \cdot n\text{H}_2\text{O}$; and $3\text{CaO} \cdot \text{Fe}_2\text{O}_3 \cdot \text{Ca}(\text{NO}_3)_2 \cdot n\text{H}_2\text{O}$
wherein $n = 0$ to 24 .
15. A method of resisting corrosion of metals in a concrete structure
comprising,
creating in a slurry containing at least one compound capable of
sequestering chloride ions,
positioning said slurry adjacent to said concrete structure, and
sequestering chloride ions in said compound.
16. The method of Claim 15 including
creating an overlay on said concrete structure with said slurry
and allowing said slurry to set.
17. The method of Claim 15 including
securing said overlay to said concrete structure to permit
chloride ion exchange therebetween.
18. The method of Claim 17 including
applying a preformed panel over said slurry.
19. The method of Claim 8 including
providing said preformed panel with lower porosity than said
slurry layer.

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20. The method of Claim 16 including employing in said slurry at least one material selected from the group consisting of NaAlO_4 , $\text{Ca}(\text{NO}_2)_2$ and NaNO_2 .

21. The method of Claim 20 including employing $\text{Ca}(\text{OH})_2$ in said compound.

22. The method of Claim 16 including employing in said compound an aluminum constituent selected from the group consisting of alumina, aluminate and alumina hydroxide.

23. The method of Claim 22 including employing in said source of aluminum a material other than $\text{CaO} \cdot \text{Al}_2\text{O}_3$ and $3\text{CaO} \cdot \text{Al}_2\text{O}_3$.

24. The method of Claim 16 including employing as said compound a compound capable of establishing a corrosion resistant oxide layer on embedded metal elements.

25. The method of Claim 16 including employing a nitrite-containing compound as said compound.

26. The method of Claim 16 including employing as said compound a compound selected from the group consisting of $3\text{CaO} \cdot \text{Al}_2\text{O}_3 \cdot \text{Ca}(\text{NO}_2)_2 \cdot n\text{H}_2\text{O}$; $3\text{CaO} \cdot \text{Al}_2\text{O}_3 \cdot \text{Ca}(\text{NO}_3)_2 \cdot n\text{H}_2\text{O}$; $3\text{CaO} \cdot \text{Fe}_2\text{O}_3 \cdot \text{Ca}(\text{NO}_2)_2 \cdot n\text{H}_2\text{O}$; and $3\text{CaO} \cdot \text{Fe}_2\text{O}_3 \cdot \text{Ca}(\text{NO}_3)_2 \cdot n\text{H}_2\text{O}$.

wherein $n = 0$ to 24 .

27. A method of resisting corrosion of metals in a concrete structure comprising

creating a solution containing a soluble source of alumina and a material selected from the group consisting of $\text{Ca}(\text{NO}_2)_2$ and NaNO_2 ,

causing said source of alumina and said materials selected from the group to react with each other and with $\text{Ca}(\text{OH})_2$ contained in the concrete structure to create a chloride sequestering compound, and

effecting said sequestration of chloride ions by said compound in said concrete structure.

28. The method of Claim 27 including

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- effecting said introduction of said solution under pressure.
29. The method of Claim 27 including
employing capillary suction to introduce said solution into said
concrete structure.
30. The method of Claim 27 including
effecting by said reaction liberation of nitrite ions which serve to
effect creation of an oxide protective layer on said metals.
31. The method of Claim 30 including
said metals being metal reinforcing elements contained within
said concrete.